



**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES**

In Re: Dominion Energy Manchester Street, Inc.

Response to Comments and Decision

Introduction

Dominion Energy Manchester Street, Inc. (Dominion) has submitted to the Department of Environmental Management, Office of Air Resources, an application for a minor modification to its current major source permit (RI-PSD-4) and its current operating permit (RI-22-02), both of which allow Dominion to operate its electrical generation facility as a source of air emissions. The requested modification is to allow discretionary burning of low sulfur fuel oil at its facility in Providence, Rhode Island.

Dominion's current permit limits fuel oil burning to that needed to maintain oil system readiness and times when natural gas is unavailable. Discretionary burning of fuel oil is not allowed. The maximum sulfur content of the fuel oil is currently limited to 3000 parts per million (ppm) by weight.

The requested modification would allow Dominion to burn fuel oil at their discretion. The quantity of fuel oil burned would be limited to 6,615,000 gallons during any 12-month period. DEM would limit the potential annual emission increase in nitrogen oxides emissions to 24 tons in any 12-month period and limit emissions to 4000 pounds per month based on a 12-month rolling average. These limitations would allow approximately 10 days of operation at the facility's maximum capacity.

The Office of Air Resources published a notice in The Providence Journal offering the public an opportunity to comment on its proposal to approve Dominion's application on 10 May 2006. The comment period closed on 9 June 2006. The Office of Air Resources received requests for a public hearing on the matter from the Rhode Island Public Interest Research Group and the American Lung Association of Rhode Island during the comment period.

On 27 June 2006 the Office of Air Resources published a notice in The Providence Journal stating that a public hearing would be held on Thursday, July 27, 2006 at 10:00 AM to afford interested persons the opportunity to be heard on its proposal to approve Dominion's application.

The availability of the draft permit and supporting documentation at the Office of Air Resources, 235 Promenade Street, Providence, Rhode Island was announced in both public notices.

A public hearing was held on Thursday, July 27, 2006 in Room 300 of the Department of Environmental Management at 10:00am. The comment period closed at 4:00pm on July 28, 2006, 79 days after the date of initial public notice. A transcript of the public hearing was prepared.

Four individuals provided comments on the record at the public hearing. They were Cathy Taylor (Director of Electric Environmental Services for Dominion), Paul DeRoche (Senior Vice President of Government Relations for the Greater Providence Chamber of Commerce), Molly Clark (Director of Environmental Health Programs for the American Lung Association of Rhode Island) and Matt Auten (Advocate for the Rhode Island Public Interest Research Group). A written comment was received from Eric Johnson (External Affairs for ISO New England). The following is a summary of the comments received.

Summary of Comments

Cathy Taylor testified on behalf of the applicant supporting the request. She stated that allowing the discretionary burning of fuel oil will proactively add flexibility to the region's energy resources and support ISO New England's objectives to supply electricity reliably and cost effectively. Ms. Taylor testified that the applicant has demonstrated that the proposed changes are protective of the National Ambient Air Quality Standards and that the proposed permit, as drafted, reflects the Best Available Control Technology. She also testified that allowing the discretionary burning of fuel oil would help mitigate the state's and region's dependence on natural gas during some of the most critical times of the year.

Paul DeRoche testified in support of the request. He testified that maintaining a reliable and affordable supply of electricity is critical to the health and welfare of Rhode Island citizens and the success of area businesses. He stated that giving Dominion permission to operate about 10 days on fuel oil will enable the plant to respond proactively to gas supply shortage situations that could lead to a power crisis. He testified that no new infrastructure, no additional traffic or impact on the Station's neighbors will be required or created as a result of the change.

Molly Clark opposes granting the request. She testified that it is the American Lung Association's position that the existing ambient air quality standards for ozone and particulate matter are not stringent enough to adequately protect the public health. She testified that Rhode Island already has an asthma epidemic and the rates are higher in the urban core where the plant is located. She stated that there is already allowance for some fuel oil burning in the current permits. She stated that DEM is charged with decreasing pollution as well as preventing increases.

Ms. Clark also testified that if the permit modifications are granted, the American Lung Association of Rhode Island would like to see the following points addressed:

- How and why did Dominion Energy arrive at the amount of 6,615,000 gallons of fuel oil for discretionary firing in any 12 month period? Was this number based on how much oil could be burned without quite exceeding the significant emission rates? If the total fuel quantity was less, the potential air quality impact would be less.

- Why is storage for 1% sulfur fuel oil allowed, when restrictions would limit any fuel oil burned to 0.05 percent?
- Discretionary fuel oil firing should not be allowed during the ozone season when NO_x emissions might have the greatest impact. The Air Quality State Implementation Plan defines summer as May through September. In addition, discretionary oil firing should not be allowed on any day of the year when the Air Quality Index is projected to go above 75, especially any day when DEM has projected stagnant air with a temperature inversion and little or no wind.
- In the recordkeeping and reporting requirements, ALARI would like to see added a provision requiring a real-time (if not advance) brief notification to RIDEM's Office of Air Resources of ANY current or planned oil burning, not just after the fact. In addition, we would request that RIDEM Office of Air Resources prepare a public report/finding of actual oil use after no longer than a two-year period, including short-term emission peaks as well as the longer averages, based on the continuous emission monitoring. Such reporting should remain in effect as long as the permits being considered today are in effect, including any renewals.

Matt Auten opposes granting the request. He expressed concerns about the air quality impacts that could result from an increase in NO_x emissions from allowing discretionary oil firing at Dominion and supports Molly Clark's testimony about not allowing discretionary fuel oil firing during the ozone season. Mr. Auten's written comments stated that not allowing discretionary oil burning during the summertime months will ensure that discretionary oil firing will not contribute to local and regional problems with ground level ozone during the months when ozone air quality problems are at their worst.

He expressed concerns about the air quality impacts that could result from an increase in sulfur dioxide and particulate emissions from allowing discretionary oil firing at Dominion and supports Molly Clark's testimony about not allowing discretionary oil firing on any day of the year when an Air Quality Index above 75 is forecast for the following day. This would ensure that additional discretionary oil firing at Dominion would not negatively impact air quality and public health in the Providence metropolitan region.

Eric Johnson submitted a statement from ISO New England in support of the request. The statement spoke to the importance of having generation in the region with the flexibility to switch to alternative fuels and that this is especially important in the winter months.

Response to Comments and Decision

The Office of Air Resources has determined, based upon its review of Dominion's application and consideration of the public comment received, that Dominion's application for a minor modification to its current major source permit (RI-PSD-4) and its current operating permit (RI-22-02) to allow discretionary burning of low sulfur fuel oil should be approved. The Office of Air Resources has determined that if the facility is operated in the manner described in the

application, it will comply with applicable state and federal air pollution control rules and regulations.

In response to some of the specific public comments received, the Office of Air Resources offers the following:

Comment: The American Lung Association of Rhode Island asked how and why did Dominion Energy arrive at the amount of 6,615,000 gallons of fuel oil for discretionary firing in any 12 month period. Was this number based on how much oil could be burned without quite exceeding the significant emission rates?

Response: The annual fuel oil limitation was based on how much oil could be burned without exceeding the significant emission rates that distinguish a minor permit modification from a major permit modification. In this case, nitrogen oxides was the pollutant that resulted in the most stringent fuel use restriction. Therefore the maximum amount of fuel oil that could be burned without exceeding the significant emission rate was calculated as follows:

$$\{[24.0 \text{ tons } NO_x/\text{yr} \times 2000 \text{ lbs/ton}] \div 65.65 \text{ lbs/hr}\} \times 9047 \text{ gal/hr} = 6,615,000 \text{ gal/yr}$$

where:

- 24.0 tons NO_x /yr is 1 ton/yr less than the significant emission rate for NO_x (25 tons/yr)
- 65.65 lbs/hr is the mass emission rate that corresponds to a concentration of 12.5 ppmvd NO_x corrected to 15% O_2 at maximum firing capacity.
- 9047 gal/hr is the maximum firing capacity of the combustion turbine.

Dominion will be able to burn this amount of fuel oil only if they can reduce the concentration of nitrogen oxides in the flue gas below that required in the permit. The permit requires Dominion to meet a 15 ppmvd concentration limit on a one-hour average basis. Dominion, in their application, stated that lower NO_x emissions (12.5 ppmvd) may be possible, but not on a continuous basis (one-hour average). Dominion believes they can achieve the 12.5 ppmvd on an annual average basis.

If Dominion is not able to achieve the 12.5 ppmvd limit on an annual average basis, they would still be required to meet the 4000 lbs per calendar month (12-month rolling average) nitrogen oxides emission limitation in the permit. For example, if Dominion was only able to achieve 15 ppmvd on an annual average basis, then the maximum amount of fuel oil that could be burned and still meet the 4000 lbs per calendar month (12-month rolling average) nitrogen oxides emission limitation in the permit would be:

$$\{[24.0 \text{ tons } NO_x/\text{yr} \times 2000 \text{ lbs/ton}] \div 78.78 \text{ lbs/hr}\} \times 9047 \text{ gal/hr} = 5,512,000 \text{ gal/yr}$$

where:

- 24.0 tons NO_x/yr is 1 ton/yr less than the significant emission rate for NO_x (25 tons/yr)
- 78.78 lbs/hr is the mass emission rate that corresponds to a concentration of 15 ppmvd NO_x corrected to 15% O₂ at maximum firing capacity.
- 9047 gal/hr is the maximum firing capacity of the combustion turbine.

Comment: The American Lung Association of Rhode Island asked why storage for 1% sulfur fuel oil is allowed, when restrictions would limit any fuel oil burned to 0.05 percent.

Response: The permit terms and conditions in Dominion's major source permit (RI-PSD-4) limits the sulfur content of the fuel oil used (that is, burned) to 0.05%. Air Pollution Control Regulation No. 8, which is applicable to all fuel burning sources in Rhode Island, limits the sulfur content of the fuel oil used and stored to 1%.

An operating permit incorporates all of the air pollution requirements that a facility is subject to into a single document. The air pollution requirements can come from state regulations, federal regulations, preconstruction permits (such as a major source permit), consent agreements and any other enforceable document. All applicable requirements must be included in an operating permit.

In the Dominion case there are two applicable requirements regarding the sulfur content of the fuel oil used (the major source permit and APC Regulation No. 8) and one applicable requirement regarding the sulfur content of the fuel oil stored. The more stringent of the two applicable requirements regarding the sulfur content of the fuel oil used (0.05%) was incorporated in to the operating permit and the lone requirement regarding the sulfur content of the fuel oil stored (1%) was incorporated into the operating permit.

To eliminate this inconsistency, the Office of Air Resources will add a condition to the revised major source permit that limits the sulfur content of the fuel oil stored to 0.05%. Thus, there will be two applicable requirements regarding the sulfur content of the fuel oil stored (the major source permit and APC Regulation No. 8) and the more stringent of the two applicable requirements (0.05%) will be incorporated into the operating permit.

These changes can be found at condition A.2.c(1) in the final major source permit and condition I.A.1.b(3)(a) in the final operating permit.

Comment: Both the American Lung Association of Rhode Island and the Rhode Island Public Interest Research Group commented that discretionary fuel oil firing should not be allowed during the ozone season when NO_x emissions might have the greatest impact. In addition, both groups commented that discretionary oil firing should not be allowed on any day of the year when an Air Quality Index above 75 is forecast for the following day, especially any day when DEM has forecast stagnant air with a temperature inversion and little or no wind.

Response: The Department, through its actions and policies, has been sending a clear and consistent message to the general public and the regulated community that emissions of ozone precursor pollutants (volatile organic compounds and NO_x) will be reduced and minimized to the maximum extent practical from existing as well as new and modified sources, especially during the summer ozone season. The Department finds that allowing the discretionary burning of fuel oil during the ozone season at Dominion's electric generating facility is inconsistent with the Department's actions and policies regarding NO_x emissions. Therefore a condition will be added to both the major source permit and the operating permit that restricts the discretionary burning of fuel oil to the period outside the ozone season, that is, from 1 October through 30 April annually.

The Office of Air Resources will not restrict discretionary fuel oil burning to days when the Air Quality Index is forecast to be less than 75 because of concerns about the usefulness and practicality of such a requirement.

For ozone, all of the days when an Air Quality Index above 75 is forecasted would occur in the 1 May to September 30 time period so prohibiting discretionary oil burning during this period would have the same effect as prohibiting burning on the days when an Air Quality Index above 75 is forecasted.

Regarding particulate matter less than or equal to 2.5 microns in diameter, the last two years of the forecasted Air Quality Index (7/26/04 – 7/26/06) were reviewed. In this time period there were 21 days where the forecasted Air Quality Index was 75 or above. Twenty (20) of these days occurred between 1 May and 30 September.

Therefore, prohibiting discretionary oil burning during the period from 1 May to 30 September would have nearly the same effect as prohibiting burning on the days when the Air Quality Index is forecast to be above 75.

In determining the Air Quality Index, there are no methods or standards for determining when conditions of "stagnant air", a "temperature inversion" or "little or no wind" exist. It is therefore impractical to use those factors to base regulatory decisions.

These changes can be found at condition C.1 in the final major source permit and condition I.A.2.a in the final operating permit.

Comment: In the recordkeeping and reporting requirements, the American Lung Association of Rhode Island would like a provision added requiring a real-time (if not advance) brief notification to RIDEM's Office of Air Resources of ANY current or planned oil burning, not just after the fact.

Response: The Office of Air Resources believes this is a reasonable request and a condition will be added to both the major source permit and the operating permit that requires prior notification to the Office of Air Resources of any planned oil burning. Prior notification will be required for discretionary fuel oil burning and fuel oil burning due to the unavailability of natural gas. Fuel oil burning to maintain oil system readiness will not require prior notification. The Office of Air Resources considers fuel oil burning to maintain oil system readiness to be of a routine/scheduled nature and therefore does not necessitate prior notification.

These changes can be found at condition F.15 in the final major source permit and condition I.A.6.s in the final operating permit.

Comment: The American Lung Association of Rhode Island requested that the Office of Air Resources prepare a public report/finding of actual oil use after no longer than a two-year period, including short-term emission peaks as well as the longer averages, based on the continuous emission monitoring. Such reporting should remain in effect as long as the permits being considered today are in effect, including any renewals.

Response: Dominion's currently provides the Office of Air Resources information on fuel usage and emissions annually as part of their Air Pollution Inventory submittal. This information is a public record available for review by the public on request. No change to the draft permits will be made in response to this comment.

Therefore, the Office of Air Resources will amend the draft major source permit and draft operating permit as indicated in the response to comments above and issue final permits to Dominion Energy Manchester Street, Inc.

Date

Stephen Majkut, Chief
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